

IN THE CLAIMS

The status of the claims as presently amended is as follows:

1. *(Canceled)*
2. *(Currently Amended)* The substrate according to claim [[1]] 3, wherein the soft magnetic underlayer has a thickness of 3 μm or greater.
3. *(Previously Presented)* A substrate for a perpendicular magnetic recording medium, the substrate comprising:
 - a nonmagnetic base composed of an aluminum alloy;
 - a soft magnetic underlayer; and
 - a nonmagnetic underlayer composed of an Ni-P alloy formed between the base and the soft magnetic underlayer,wherein the soft magnetic underlayer consists of a Ni-P alloy containing phosphorus in a range of 0.5 wt% to 6 wt%.
4. *(Original)* The substrate according to claim 3, wherein the nonmagnetic underlayer has a thickness ranging 0.5 μm to 7 μm , the soft magnetic underlayer has a thickness of 0.3 μm or greater, and a sum of the thickness of the nonmagnetic underlayer and the thickness of the soft magnetic underlayer is 3 μm or greater.
5. *(Original)* The substrate according to claim 3, wherein the nonmagnetic underlayer is composed of Ni-P alloy containing about 11 wt% of phosphorus.
6. *(Currently Amended)* The substrate according to claim [[2]] 3, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.
7. *(Original)* The substrate according to claim 4, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.
8. *(Canceled)*

9. (*Currently Amended*) The perpendicular magnetic recording medium according to claim [[8]], wherein the soft magnetic underlayer has a thickness of 3 μm or greater.
10. (*Previously Presented*) A perpendicular magnetic recording medium comprising:
a substrate; and
a nonmagnetic seed layer, a magnetic recording layer, and a protective layer sequentially formed on the substrate,
wherein the substrate comprises a nonmagnetic base composed of an aluminum alloy, a soft magnetic underlayer, and a nonmagnetic underlayer composed of an Ni-P alloy formed between the base and the soft magnetic underlayer,
wherein the soft magnetic underlayer consists of a Ni-P alloy containing phosphorus in a range of 0.5 wt% to 6 wt%, and
wherein the soft magnetic underlayer functions as a soft magnetic backing layer.
11. (*Original*) The perpendicular magnetic recording medium according to claim 10, wherein the nonmagnetic underlayer has a thickness ranging 0.5 μm to 7 μm , the soft magnetic underlayer has a thickness of 0.3 μm or greater, and a sum of the thickness of the nonmagnetic underlayer and the thickness of the soft magnetic underlayer is 3 μm or greater.
12. (*Original*) The perpendicular magnetic recording medium according to claim 10, wherein the nonmagnetic underlayer is composed of Ni-P alloy containing about 11 wt% of phosphorus.
13. (*Currently Amended*) The perpendicular magnetic recording medium according to claim [[9]], wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.
14. (*Original*) The perpendicular magnetic recording medium according to claim 11, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.
15. (*Currently Amended*) The perpendicular magnetic recording medium according to claim [[8]], further including a soft magnetic supplement layer between the soft magnetic underlayer of

the substrate and the nonmagnetic seed layer, wherein the soft magnetic supplement layer has a film thickness of 50 nm or less, and a product of the film thickness and a saturation magnetic flux density is 150 G μm or larger.

16. (*Canceled*)

17. (~~Withdrawn~~ *Currently Amended*) The method according to claim ~~[[16]]~~ 18, wherein the soft magnetic underlayer has a thickness of 3 μm or greater.

18. (~~Withdrawn~~ *Currently Amended*) A method of manufacturing a substrate for a perpendicular magnetic recording medium, the method comprising the steps of:

providing a nonmagnetic base composed of an aluminum alloy;

electroless plating a nonmagnetic underlayer composed of an Ni-P alloy on the nonmagnetic base; and

electroless plating a soft magnetic underlayer consisting of a Ni-P alloy containing phosphorus in a range of 0.5 wt% to ~~[[4]]~~ 6 wt% on the nonmagnetic underlayer.

(*Original*)
19. (~~Withdrawn~~) The method according to claim 18, wherein the nonmagnetic underlayer has a thickness ranging 0.5 μm to 7 μm , the soft magnetic underlayer has a thickness of 0.3 μm or greater, and a sum of the thickness of the nonmagnetic underlayer and the thickness of the soft magnetic underlayer is 3 μm or greater.

20. (~~Withdrawn~~ *Currently Amended*) The method according to claim ~~[[16]]~~ 17, further comprising the step of heating the substrate to a temperature of 300° C or less for 30 minutes or longer after forming the soft magnetic underlayer.

(*Original*)
21. (~~Withdrawn~~) The method according to claim 18, further comprising the step of heating the substrate to a temperature of 300° C or less for 30 minutes or longer after forming the soft magnetic underlayer.

22. (~~Withdrawn~~ *Currently Amended*) The method according to claim ~~[[17]]~~ 18, further including the step of polishing the surface of the soft magnetic underlayer using free abrasive grains to smooth the surface thereof.

(Original)

23. ~~(Withdrawn)~~ The method according to claim 19, further including the step of polishing the surface of the soft magnetic underlayer using free abrasive grains to smooth the surface thereof.

24. ~~(Withdrawn)~~ *Currently Amended* The method according to claim ~~[[22]]~~ 18, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.

(Original)

25. ~~(Withdrawn)~~ The method according to claim 23, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.

26. *(Canceled)*

27. ~~(Withdrawn)~~ *Currently Amended* The method according to claim ~~[[26]]~~ 28, wherein the soft magnetic underlayer has a thickness of 3 μm or greater.

(Previously presented)

28. ~~(Withdrawn)~~ A method of manufacturing a perpendicular magnetic recording medium comprising the steps of:

forming a substrate by providing a nonmagnetic base composed of an aluminum alloy, electroless plating a nonmagnetic underlayer composed of an Ni-P alloy on the nonmagnetic base, and electroless plating a soft magnetic underlayer consisting of a Ni-P alloy containing phosphorus in a range of 0.5 wt% to 6 wt% on the nonmagnetic underlayer;

texturing a surface of the soft magnetic underlayer using free abrasive grains; and

sequentially forming a nonmagnetic seed layer, a magnetic recording layer, and a protective layer by sputtering.

(Original)

29. ~~(Withdrawn)~~ The method according to claim 28, wherein the nonmagnetic underlayer has a thickness ranging 0.5 μm to 7 μm , the soft magnetic underlayer has a thickness of 0.3 μm or greater, and a sum of the thickness of the nonmagnetic underlayer and the thickness of the soft magnetic underlayer is 3 μm or greater.

30. ~~(Withdrawn)~~ *Currently Amended*) The method according to claim ~~[[26]]~~ 27, further comprising the step of heating the substrate to a temperature of 300° C or less for 30 minutes or longer after forming the soft magnetic underlayer.

(Original)
31. ~~(Withdrawn)~~ The method according to claim 28, further comprising the step of heating the substrate to a temperature of 300° C or less for 30 minutes or longer after forming the soft magnetic underlayer.

(Original)
32. ~~(Withdrawn)~~ The method according to claim 28, further including the step of forming a soft magnetic supplement layer on the soft magnetic underlayer before forming the nonmagnetic seed layer, wherein the soft magnetic supplement layer has a film thickness of 50 nm or less, and a product of the film thickness and a saturation magnetic flux density is 150 G μ m or larger.

33. ~~(Withdrawn)~~ *Currently Amended*) The method according to claim ~~[[27]]~~ 28, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.

(Original)
34. ~~(Withdrawn)~~ The method according to claim 29, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.